

AMENDMENT TO THE CLAIMS

1. (currently amended): A communication apparatus for communicating speech and data, the apparatus comprising:

input processing means for storing and managing at least one of three types of frames which include speech frames carrying speech signals, data frames carrying data signals, and integrated frames carrying both speech and data signals;

frame controlling means for integrating the speech frames, being speech signals made into frames, and data frames, being data made into frames, into the integrated frames and performing routing control of the speech frames, the data frames, and the integrated frames each integrated frame allowing the speech frame integrated therein to occupy as much bandwidth as required, while assigning the remaining bandwidth to the data frame therein, the data frame containing a plurality of packets to each of which QOS priority is set;

input processing means for storing and managing at least one of the three types of frames of the speech frames, the data frames, and the integrated frames; and

output processing means for storing and managing transmitting the frames transferred, routed by said frame controlling means, while dynamically setting a bandwidth ratio therefore of the frames dynamically, and transmitting the speech frames, the data frames, and the integrated frames from on lines.

2. (cancelled)

3.(original): The communication apparatus according to claim 1, wherein the frame controlling means generates the integrated frames by creating priority information fields for the data frames in which high priority corresponds to connection-mode communication and

low priority corresponds to connectionless-mode communication.

4.(original): The communication apparatus according to claim 1, wherein the frame controlling means generates the integrated frames by creating an information field for controlling common line signals.

5.(original): The communication apparatus according to claim 1, wherein the input processing means has two storage areas and stores the frames by switching the storage areas every cycle.

6.(original): The communication apparatus according to claim 1, wherein the frame controlling means performs the routing control and a switching transfer of the frames to the output processing means on the basis of information regarding the frames.

7.(original): The communication apparatus according to claim 1, wherein the frame controlling means performs the routing control and generates transfer scheduling information, on the basis of information regarding the frames.

8.(original): The communication apparatus according to claim 7, wherein the input processing means transfers the frames to the output processing means on the basis of the transfer scheduling information.

9.(original): The communication apparatus according to claim 1, wherein the output processing means generates and outputs one representative frame when the data frames transferred include identical frames.

10.(original): The communication apparatus according to claim 9, wherein the frame controlling means generates the plurality of identical frames when the frame controlling means receives the representative frame.

11.(currently amended): A communication system for communicating speech and data, the system comprising:

a telephone switching system;

a network connecting device for performing a connecting process between networks; and

a communication apparatus, connected to at least one of an office telephone interface line of the telephone switching system, an office data interface line of the network connecting device, and an interoffice trunk line, the communication apparatus comprising:

input processing means for storing and managing at least one of three types of frames which include speech frames carrying speech signals, data frames carrying data signals, and integrated frames carrying both speech and data signals,

frame controlling means for integrating the speech frames, being speech signals made into frames, and data frames, being data made into frames, into the integrated frames and performing routing control of the speech frames, the data frames, and the integrated frames, the integrated frame allowing the speech frame therein to occupy as much bandwidth as required while assigning the remaining bandwidth to the data frame, the data frame containing a plurality of packets to each of which QOS priority is set
input processing means for storing and managing at least one of the three types of frames of the speech frames, the data frames, and the integrated frames, and

output processing means for storing and managing transmitting the frames transferred, routed by said frame controlling means, while dynamically setting a bandwidth ratio therefore.

~~of the frames dynamically, and transmitting the speech frames, the data frames, and the integrated frames from on lines and connected to at least one of an office telephone interface line of the telephone switching system, an office data interface line of the network connecting device, and an interoffice trunk line.~~

12.(original): The communication system according to claim 11, wherein the frame controlling means generates the integrated frames by causing the speech frames to occupy bandwidth which the speech frames use and assigning the rest of the bandwidth to the data frames.

13.(original): The communication system according to claim 11, wherein the frame controlling means generates the integrated frames by creating priority information fields for the data frames in which high priority corresponds to connection-mode communication and low priority corresponds to connectionless-mode communication.

14.(original): The communication system according to claim 11, wherein the frame controlling means generates the integrated frames by creating an information field for controlling common line signals.

15.(original): The communication system according to claim 11, wherein the input processing means has two storage areas and stores the frames by switching the storage areas every cycle.

16.(original): The communication system according to claim 11, wherein the frame controlling means performs the routing control and a switching transfer of the frames to the output processing means on the basis of information regarding the frames.

17.(original): The communication system according to claim 11, wherein the frame controlling means performs the routing control and generates transfer scheduling information, on the basis of information regarding the frames.

18.(original): The communication system according to claim 17, wherein the input processing means transfers the frames to the output processing means on the basis of the transfer scheduling information.

19.(original): The communication system according to claim 11, wherein the output processing means generates and outputs one representative frame when the data frames transferred include identical frames.

20.(original): The communication system according to claim 19, wherein the frame controlling means generates the plurality of identical frames when the frame controlling means receives the representative frame.

21.(currently amended): A method for integrating speech and data for communicating by integrating and controlling speech and data, the method comprising the steps of:

storing and managing at least one of three types of frames which include speech frames carrying speech signals, data frames carrying data signals, and integrated frames carrying both speech and data signals;

integrating the speech frames and data frames into the integrated frames and performing routing control of the speech frames, data frames, and integrated frames, wherein each integrated frame allows the speech frame integrated therein to occupy as much

bandwidth as required, while assigning the remaining bandwidth to the data frame therein,
and wherein the data frame containing a plurality of packets to each of which QOS priority is
set; and

storing and transmitting the frames routed by said frame controlling means,
while dynamically setting a bandwidth ratio therefore

~~the step of integrating speech frames, being speech signals made into frames,~~
~~and data frames, being data made into frames, into integrated frames;~~

~~the step as an input side process of storing and managing at least one of the~~
~~three types of frames of the speech frames, the data frames, and the integrated frames;~~

~~the step of performing routing control of the speech frames, the data frames,~~
~~and the integrated frames; and~~

~~the step as an output side process of storing and managing the frames~~
~~transferred, setting a bandwidth ratio of the frames dynamically, and transmitting the speech~~
~~frames, the data frames, and the integrated frames from on lines.~~

22.(original): The method for integrating speech and data according to claim 21,
wherein the integrated frames are generated by causing the speech frames to occupy
bandwidth which the speech frames use and assigning the rest of the bandwidth to the data
frames:

23.(original): The method for integrating speech and data according to claim 21,
wherein the integrated frames are generated by creating priority information fields for the data
frames in which high priority corresponds to connection-mode communication and low
priority corresponds to connectionless-mode communication.

24.(original): The method for integrating speech and data according to claim 21,

wherein the integrated frames are generated by creating an information field for controlling common line signals.

25.(original): The method for integrating speech and data according to claim 21, wherein the frames are stored as the input-side process by switching two storage areas every cycle.

26.(original): The method for integrating speech and data according to claim 21, wherein the routing control is performed and a switching transfer of the frames is performed for the output-side process, on the basis of information regarding the frames.

27.(original): The method for integrating speech and data according to claim 21, wherein the routing control is performed and transfer scheduling information is generated, on the basis of information regarding the frames.

28.(original): The method for integrating speech and data according to claim 27, wherein the frames are transferred as the input-side process for the output-side process on the basis of the transfer scheduling information.

29.(original): The method for integrating speech and data according to claim 21, wherein one representative frame is generated and output as the output-side process when the data frames transferred include identical frames.

30.(original): The method for integrating speech and data according to claim 29, wherein the plurality of identical frames are generated if the representative frame is received at the time of the routing control.